



February 14, 2020

Mr. Gerald Smith  
City Manager  
201 East Pleasant Street  
Maquoketa, IA 52060

And

Mr. Frank Ellenz  
507 North Old Highway 61  
Maquoketa, IA 52060

***Re: Maquoketa Clinton Engines LRP, Well and Receptor Survey, Former Clinton Engines Museum Site, 605 East Maple Street, Maquoketa, Iowa.***

Dear Mr. Smith and Mr. Ellenz,

The following letter report is in response to the DNR September 26, 2019 letter regarding the well and receptor survey in the vicinity of the Clinton Engines Site. Chemicals of concern (COCs) at the site including volatile organic compounds in the form of chlorinated solvents present a risk to drinking and non-drinking water wells and a risk to plastic or non-chemical resistant gasketed water mains and service lines. In addition, vapors COCs can migrate along sanitary sewer and water line conduits into structures. Receptors surveyed as part of this assessment included registered drinking water and non-drinking water wells, water and sanitary sewer utilities and buildings with basements.

#### ***Well Survey***

Registered drinking water wells were inventoried from the Iowa Institute of Hydraulic Research (IIHR) GEOSAM database and cross referenced with the Iowa Department of Natural Resources (IDNR) Facility Maintenance Explorer. A field reconnaissance was conducted on December 20, 2019 and on January 9<sup>th</sup> and 10<sup>th</sup> 2020 to field verify the presence or absence of wells listed on the databases. The field reconnaissance was limited to public property and ROWs; however, private properties with listed water supply wells were readily observed from outside of the property boundaries. Apart from the City of Maquoketa municipal water supply wells (well IDs 4718, 24834 and 2407251), the remaining listed wells were not observed during the site reconnaissance. As part of a public outreach campaign initiated by the City of Maquoketa, a letter questionnaire has been sent to residents located within the vicinity of the Clinton Engines Site requesting information about any private or unregistered wells that may be present on their properties. If positive responses are returned as part of the outreach campaign, the additional wells will be included on the attached well receptor map (Attachment A). Wells identified within the vicinity of the Clinton Engines site via the GEOSAM database and during the site reconnaissance are presented on the following Table 1:

**Table 1: Registered Wells and Status within the Vicinity of the Clinton Engine Site**

Well ID	Well Type	Location	Owner Name	Status	Lat	Long	Field Verified
4718	Water Use Permit Wells	T84N, R03, S19, SW, SW	CITY OF MAQUOKETA	Active Municipal Well	42.06206967064	90.6636304283153	Yes
24834	Public Water Supply Wells	T84N, R03, S19, SW, SW	CITY OF MAQUOKETA	Active Municipal Well	42.0620884066961	-90.6636659973767	Yes



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**Table 1: Registered Wells and Status within the Vicinity of the Clinton Engines Site (continued)**

Well ID	Well Type	Location	Owner Name	Status	Lat	Long	Field Verified
2407251	Public Water Supply Wells	T84N, R03, S19, SW, SW	CITY OF MAQUOKETA	Active	42.0620899987496	90.6636699993607	Yes
2111472	Private	T84N, R3E, S20	Dawn Hare	Active	42.0720565302129	-90.6424709920681	No
2113861	Private	T84N, R3E, S19	Signature Properties	Plugged	42.0668999987727	-90.6652999992862	No
2124483	Private	T84N, R3E, S20	Tracy Taylor	Active	42.0633563154097	-90.6403708174568	No
2203716	Private	T84N, R3E, S19	Randy Kuhlman	Permitted	42.069367320003	-90.6626707273075	No
18784	Private	T84N, R3E, 19	Dave Sanders	Active	42.069077060903	-90.656169639055	No
22425	Abandoned	T84N, R3E, Sec. 19, NE, SW, SW	Us West Communications	Plugged	42.07004650296	-90.6549124498777	No

#### ***Water and Sewer Line Receptors***

On January 9<sup>th</sup> and 10<sup>th</sup> 2020, an Environmental specialist from Impact7G and with Mr. Jeff Banaue with the City of Maquoketa Public Works Department surveyed the locations of water mains, water service lines, water valves, sanitary sewer mains and sanitary sewer manholes in the vicinity of the Clinton Engines site and in areas of known groundwater and potential groundwater impacts with a GPS recorded. Based on information provided by the City of Maquoketa, water mains in the survey area are generally constructed of 4" to 6" inside diameter (ID) cast iron or ductile iron pipe and are not equipped with chemical resistant gaskets. The water mains depths are generally located between 4.5 to 5.0-feet below grade (bg). Water service lines construction material types are currently unknown. Sanitary sewer mains located in the vicinity of the Clinton Engines site are generally constructed of 8" clay pipe and are buried approximately 8-feet bg. Sanitary sewer service lines in the vicinity of the Clinton Engines site may be constructed of clay, orangeburg or PVC pipe. The water and sanitary sewer utility maps are presented as Attachments B.

#### ***Buildings with Basements***

Buildings with basements were inventoried via the [beacon.schneidercorp.com](http://beacon.schneidercorp.com) property information viewer website for Jackson County, Iowa and during site reconnaissance. The buildings with basements map in the vicinity of the Clinton Engines site and in areas of known groundwater and potential groundwater impacts are presented as Attachment C. A spreadsheet listing the corresponding addresses to each basement receptor are also presented in Attachment C.

***Recommendations***

As part of a public outreach campaign initiated by the City of Maquoketa, a letter questionnaire has been sent to residents located within the vicinity of the Clinton Engines Site requesting information about any private or unregistered wells that may be present on their properties. If positive responses are returned as part of the outreach campaign, the additional well locations will be included on Well Survey Map (Attachment A). If you have any questions regarding this receptor survey, please feel free to contact Impact7G at 319-855-2843.

Sincerely,  
**Impact7G**



Cc: Ms. Shelly Nellesen, IDNR Contaminated Sites Section  
Attachments

**ATTACHMENT A**

**Well Survey**





- Wells
- Area of Interest

## Well Sites - Maquoketa Iowa

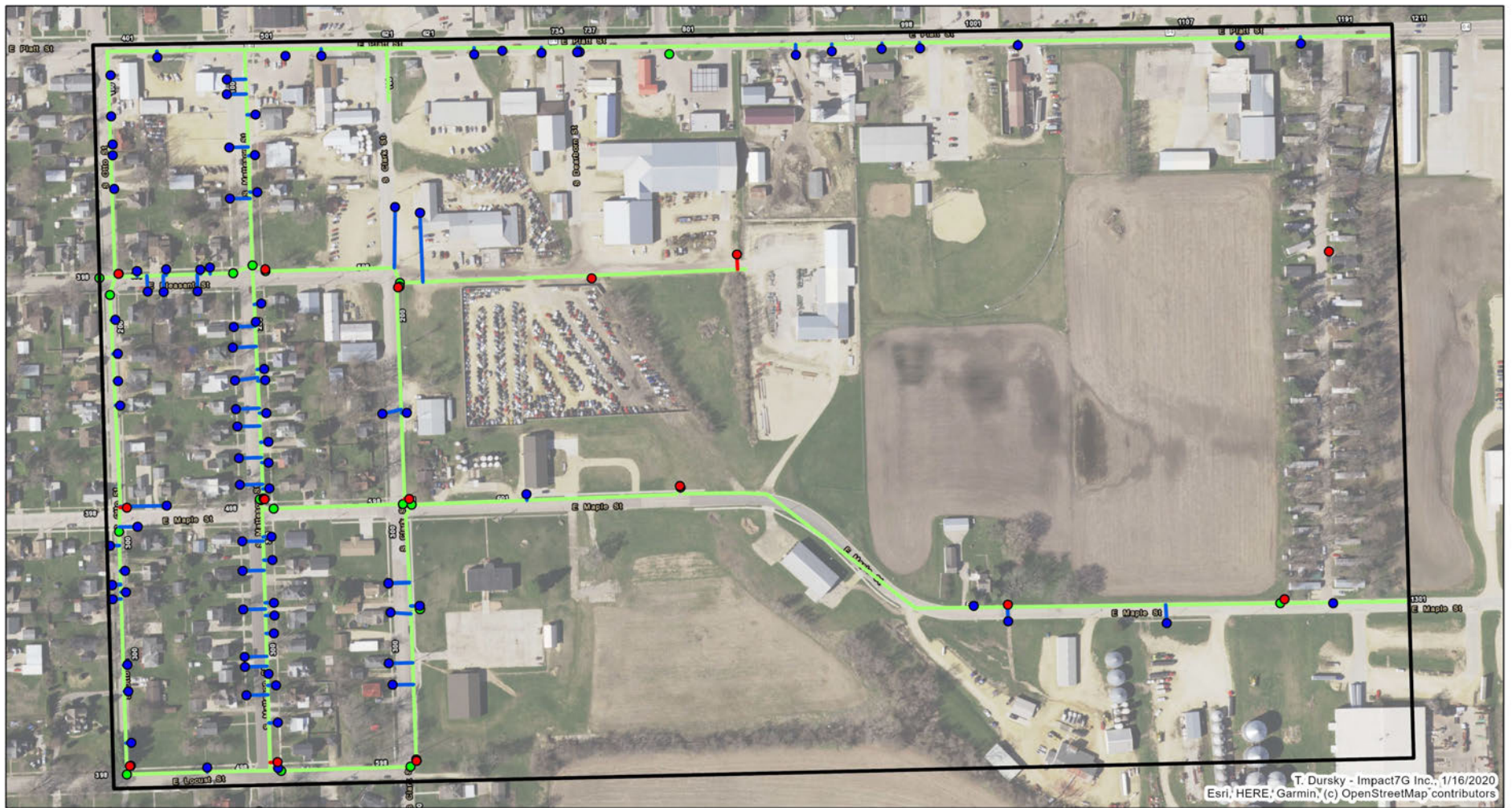
0 500 1,000 1,500 2,000 Feet



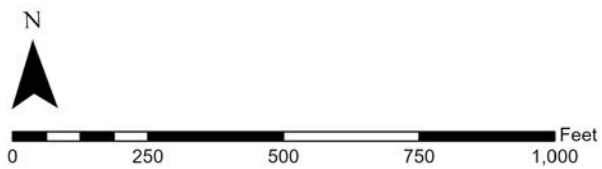
R. Vanderwerff, Impact7G, 11/5/2019  
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**ATTACHMENT B**  
**WATER AND SANITARY UTILITY MAPS**





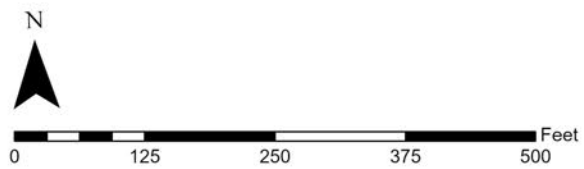
T. Dursky - Impact7G Inc., 1/16/2020  
 Esri, HERE, Garmin, (c) OpenStreetMap contributors



### Maquoketa Water Utilities

- Fire Hydrant
- Water Valve
- Fire Hydrant Network
- Water Main
- Water Service Line
- ▭ Project Boundary
- Water Service Line Network



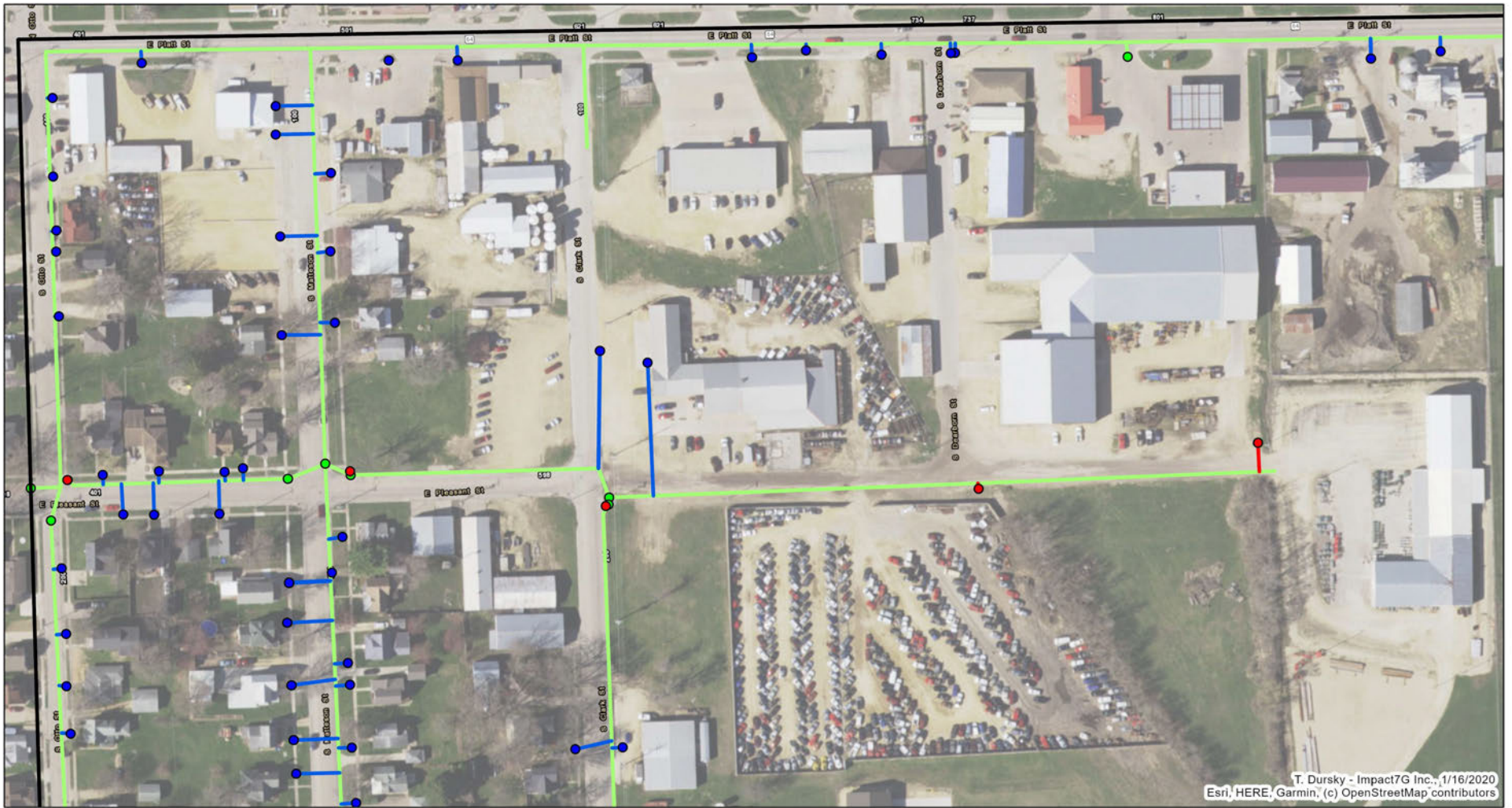


### Maquoketa Water Utilities

- Fire Hydrant
- Water Valve
- Fire Hydrant Network
- Water Main
- Water Service Line
- Water Service Line Network
- ▭ Project Boundary







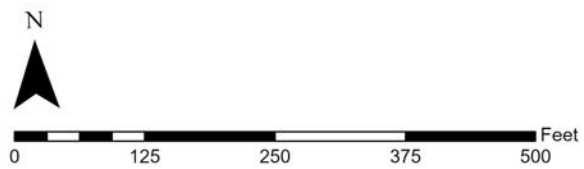


### Maquoketa Water Utilities

- Fire Hydrant
- Water Valve
- Fire Hydrant Network
- Water Main
- Water Service Line
- Water Service Line Network
- ▭ Project Boundary





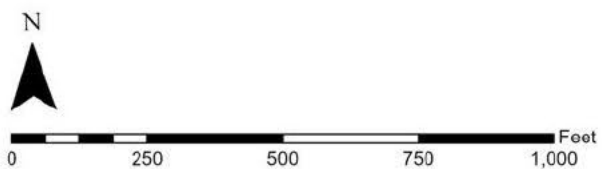
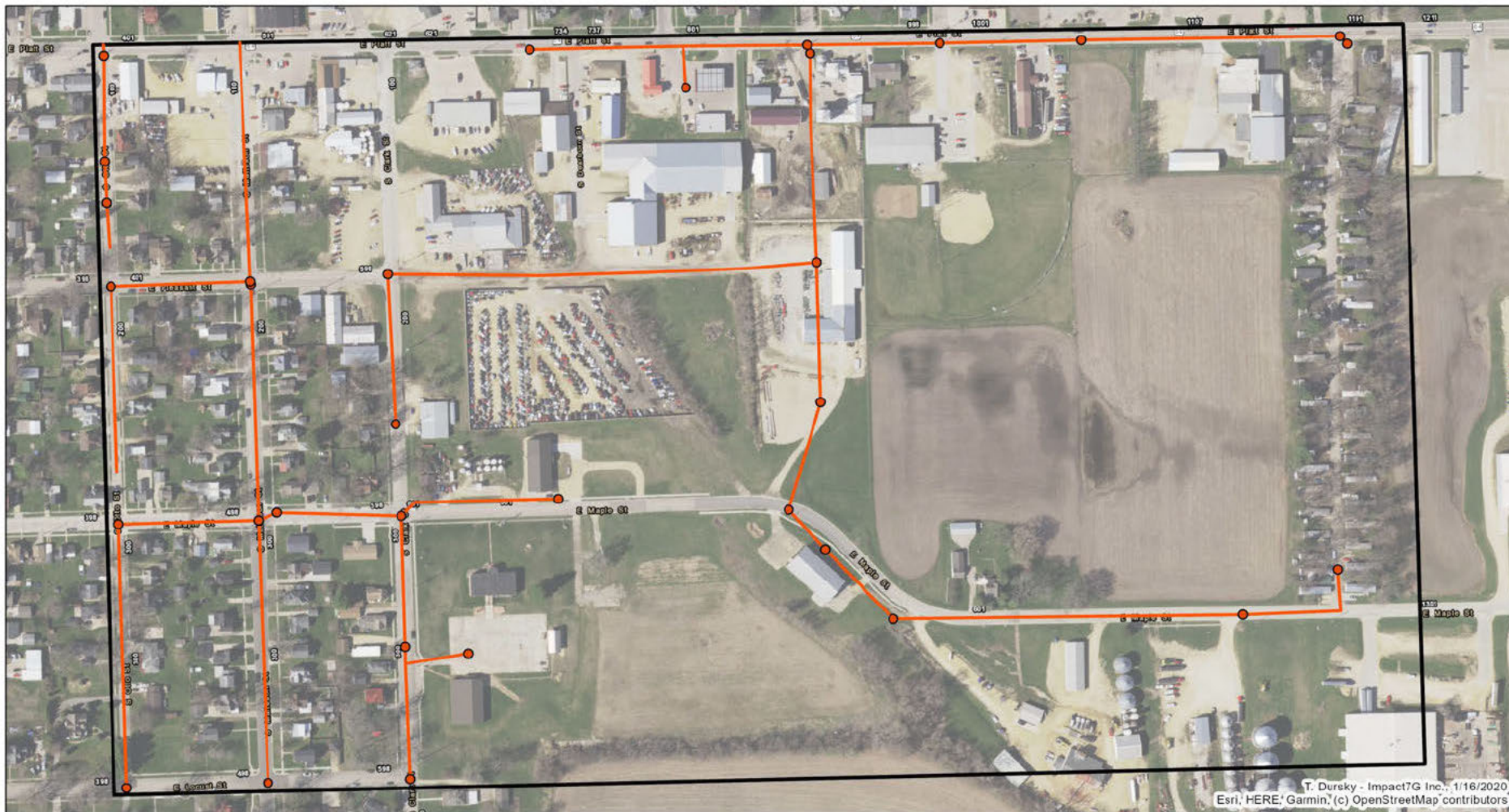


### Maquoketa Water Utilities

- Fire Hydrant
- Fire Hydrant Network
- Water Service Line
- Water Service Line Network
- Water Valve
- Water Main
- ▭ Project Boundary







## Maquoketa Sanitary Sewer Utilities

- Project Boundary
- Sanitary Sewer Manholes
- Sanitary Sewer Network

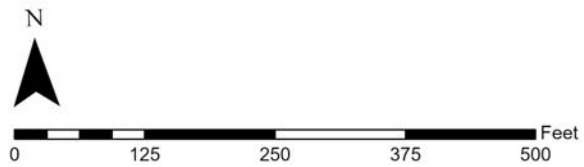


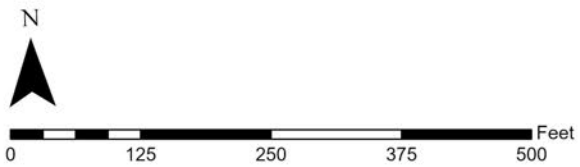




### Maquoketa Sanitary Sewer Utilities

- Project Boundary
- Sanitary Sewer Manholes
- Sanitary Sewer Network





### Maquoketa Sanitary Sewer Utilities

- Project Boundary
- Sanitary Sewer Manholes
- Sanitary Sewer Network











**ATTACHMENT C**

**BUILDINGS WITH BASEMENT SURVEY MAP**



## Confined Space (basement) Receptors

□ Confined Space Receptors

0 200 400 600 800 1,000 Feet



R. Vanderwerff, Impact7G, 1/20/2020  
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



# MEMO



<b>To:</b>	Gerald Smith, City Manager, City of Maquoketa, Iowa
<b>From:</b>	[REDACTED], Impact7G
<b>Subject:</b>	Buildings with Basements Near the Clinton Engines Site
<b>Date:</b>	February 14, 2020

Gerald,

The following Table list residential buildings with basement located in proximity to the Clinton Engines site. A risk factor includes potential vapor intrusion of trichloroethylene (TCE) into residential basement confined space receptors from the off gassing of TCE in subsurface groundwater.

Map ID	Address	Deed Holder
1	[REDACTED] S Otto St	[REDACTED]
2	[REDACTED] S Otto St	[REDACTED] [REDACTED]
3	[REDACTED] S Otto St	[REDACTED] [REDACTED]
4	[REDACTED] S Otto St	[REDACTED]
5	[REDACTED] E Maple St	[REDACTED]
6	[REDACTED] E Maple St	[REDACTED]
7	[REDACTED] E Maple St	[REDACTED]
8	[REDACTED] S Otto St	[REDACTED]
9	[REDACTED] S Otto St	[REDACTED]
10	[REDACTED] S Otto St	[REDACTED]
11	[REDACTED] S Otto St	[REDACTED]
12	[REDACTED] S Matteson St	[REDACTED]
13	[REDACTED] S Matteson St	[REDACTED]

14	█ S Matteson St	██████████
15	█ S Matteson St	██████████████████
16	█ S Matteson St	██████████
17	█ S Matteson St	██████████
18	█ S Matteson St	██████████
19	█ E Maple ST	██████████
20	█ S Matteson St	██████████
21	█ S Matteson St	██████████
22	█ S Matteson St	██████████
23	█ S Matteson St	██████████
24	█ S Matteson St	██████████
25	█ S Matteson St	██████████████
26	█ S Matteson St	██████████
27	█ S Matteson St	██████████
28	█ S Clark St	██████████
29	█ S Clark St	██████████
30	█ S Clark St	██████████
31	█ S Clark St	██████████
32	█ S Clark St	██████████████████
33	█ E Maple St	██████████
34	█ E Platt St	██ ██████████
35	█ E Platt St	██ ██████████
37	█ E Maple St	██████████████████



38	█ S Clark St	████████████████████
39	█ S Clark St	██████████████
40	█ S Matteson St	██████
41	█ S Matteson St	██████████
42	█ S Matteson St	████████████████
43	█ S Matteson St	██████████
44	█ S Matteson St	██ ████████████████████
45	█ S Matteson St	██████████
46	█ S Matteson St	██████████
47	█ S Matteson St	████████████████████
48	█ S Matteson St	████████████████████
49	█ E Maple St	██ ██████████████
50	█ E Maple St	██████████
51	█ S Matteson St	██████████
52	█ S Matteson St	██ ██████
53	█ S Matteson St	██ ██████
54	█ S Matteson St	██████████████
55	█ S Matteson St	██████████
56	█ S Matteson St	██████████
57	█ E Pleasant St	██████████████
58	█ E Pleasant St	██████████

59	█ E Pleasant St	██ ████
60	█ S Otto St	████████████████
61	█ S Otto St	██████████
62	█ S Otto St	██ ████████████████████
63	█ E Maple St	██ ████
64	█ E Maple St	██ ████
65	█ S Otto St	████████████████████
66	█ S Otto St	██████████
67	█ S Otto St	██████████
68	█ S Otto St	██████████
69	█ E Pleasant St	██████████
70	█ E Pleasant St	██████████
71	█ E Pleasant St	██████████
72	█ E Pleasant St	██ ████
73	█ S Otto St	██ ████
74	█ S Otto St	██ ████
75	█ S Otto St	████████████████
76	█ S Otto St	██████████
77	█ S Otto St	██ ████████████████
78	█ E Platt ST	██████████



79	█ S Otto St	██ ████████
80	█ S Otto St	██ ████████████████████
81	█ S Otto St	██████████
82	█ E Pleasant St	████████████████
83	█ E Pleasant St	██████████████
84	█ E Pleasant St	██████████████████
85	█ E Pleasant St	██████████████████
86	█ S Matteson St	██ ████████████████
87	█ S Matteson St	"██████████
89	█ E Platt ST	██████████████
90	█ Anderson St	██████████
91	█ ANDERSON ST	██████████████████
92	█ Anderson St	██████████████
93	█ Anderson St	██████████████████
94	█ Anderson St	██████████████████
95	█ Anderson St	██████████████████
96	█ Anderson St	██████████
97	█ Anderson St	██████████████████
98	█ E Platt ST	██████████
99	█ E Platt St	██████████
100	█ Edna St	██ ██████████████████
101	█ Edna St	██████████

102	█ Edna St	████████████████████
103	█ Edna St	██████████████
104	█ Edna St	██████████████
105	█ Edna St	████████████████████
106	█ E Platt St	██████████████
107	█ E Platt St	██████████
108	█ E Platt St	██████████████
109	█ N Walnut St	██████████████
110	█ N Walnut St	████████████████
111	█ N Walnut St	████████████████████
112	█ N Walnut St	████████████████
113	█ N Walnut St	██████████████
114	█ N Walnut St	██████████████
115	█ N Walnut St	████████████████
116	█ E Platt St	██ ██████████
117	█ E Platt St	██
118	█ E Platt St	██ ██████████
119	█ N Dearborn St	██████████████
120	█ N Dearborn St	████████████████████

121	█ N Dearborn St	████████████████████
122	█ N Dearborn St	██ ██████████



123	████ N Dearborn St	██
124	████ N Dearborn St	██ ████
125	████ N Dearborn St	████████████████
126	████ N Matteson St	████████████████████
127	████ N Matteson St	██ ████████
128	████ N Dearborn St	██ ████
129	████ N Matteson St	██ ████
130	████ N Matteson St	████████████████████████████
131	████ E Platt St	██
132	████ N Otto St	██ ████
133	████ N Otto St	██
134	████ N Otto St	████████████████████████████
135	████ N Otto St	████████████████████████████████
136	████ N Otto St	████████
137	████ E Platt St	██ ████